DESENSITIZING PLATES AND FILMS.

The phenosafranine process of desensitizing plates and films was discovered several years ago by Dr. Luppo-Cramer and permits of developing of ordinary plates, orthochromatic, or even panchromatic plates in the bright yellow light commonly used for D.O.P. The darkroom is not entirely dispensed with, but after the plates or films have been bathed in the dye for a minute or so, development may be carried out at one to two meters from a 16 c.p. electric light for ordinary plates, or the same distance from a candle for panchromatic plates. However, it is of little advantage in working with a feeble white light when one can use an abundance of yellow light.

To date phenosafranine dye has been found to be the best dye for the purpose, reducing the sensitiveness of the emulsion from 200 to 300 times. The dye may be added to the developer and the plates developed for one minute in the dark before the light is turned on, but the preferable method is to bathe the plate in the dye solution first for a minute then proceed with the develppment using the bright yellow light.

A good method is as follows: One gram (15.4 grains Adv.) of phenosafranine is dissolved in 2000 c.c. (70 ounces) of distilled water. The solution has a bluish red color, keeps indefinitely, and may be used over and over.

Place the exposed plate in this solution in the dark or by the proper safelight for the plate used. After the coloring matter has penetrated the film, which will require about one minute, the yellow light is turned on the plate placed in the developer. The negative may be held in front of the light and examined by transmitted light, if desired, without producing fog, although if one uses the factorial system, for which the bright light is a great help, this is unnecessary. Longer immersion in the dye does no harm, but it is unnecessary for ordinary plates and films.

After development, the plate is rinsed and placed in an acid hypo bath in the usual manner. Phenosafranine stains the plate a light red, but this color usually disappears after thorough fixing in acid hypo and thorough washing. However, the stain does not readily disappear from certain doubly coated plates, and in such cases it is only necessary to place the plate, after fixing and washing for say 20 minutes, in one or two changes of a few minutes each of water 100 parts, alum 2 parts, and concentrated hydrochloric acid 5 parts. Wash again for 15 minutes and dry. A clearing bath, more rapid than the above consists of: water 100 cc., sodium nitrate 0.5 gram, hydrochloric acid 5 cc. Immerse plate until the color changes to blue, then wash.

Usually, however, the clearing bath is unnecessary. For panchromatic plates it may be necessary to leave the plates in the dye somewhat longer or to use a more concentrated solution.

Although phenosafranine is a red dye, it is not this color which protects the sensitive film from the light. Examined by the spectroscope, a plate dyed for one minute transmits all the spectrum except a small portion of the blue-green.

In working with the dye one should use a rubber finger tip or plate lifter, otherwise the fingers will become badly stained.

July 29, 1921.

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Kotterman letter, and formular.

ADDRESS: C. A. Kotterman,
DEPARTMENT TERRESTRI
36TH STREET AND BROAD BR
WASHINGTON, D. C., U.

D. C., July 29, 1921.

Mr. C. Francis Jenkin
1519 Conn. Ave.,
Washington, D. C.

Dear Mr. Jenkins:

It affords me much pleasure to send you herewith a description of the phenosafranine method of desensitizing plates and films, and I am also inclosing sufficient dye which, when dissolved in 70 ounces of water, will produce a bath that will last a long time.

I trust the material will at least afford a basis for some interesting experimenting if nothing more.

With best wishes I remain

Sincerely,

C. A. Kotterman.

Ack'd 7/30